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Australia : Archæology. **McCarthy.**

Records of the Rock Engravings of the Sydney District, Nos. 21-32. *By Frederick D. McCarthy*

In this article are described hitherto unrecorded groups of rock engravings from scattered localities. The scale is approximately 8 feet to 1 inch. In some instances the actual distance between figures has been reduced owing to exigencies of space for purposes of illustration.

GROUP 21. BROOKVALE. (Plate T, Figure 1.)

Site. This group is situated in the bed of a small creek which flows roughly parallel with and about one furlong from the western side of Allambie Road. It is a tributary of Curl Curl Creek. The site is behind Mr. Dale's property. The rock is narrow and the creek, which rises in swampy ground near by, flows along its western and lower side. About one hundred yards below the site the creek drops abruptly into a deep and wide gully. Parish Manly Cove, County Cumberland.

Description. The group consists of a remarkable maze of finished and unfinished figures and of odd lines. The principal figure is a whale whose outline encloses many others. The two sets of parallel lines at the top appear at first sight to be pubic girdles, but it is more probable that they represent the gills of the whale, and the small ovals above them are its eyes. At the posterior end of the whale, just above the lower fin of its tail, is another fish or ray-like figure of an unusual kind ; a number of lines join the human footprints and fish-like figures both inside and outside the whale. There are two boomerangs or crescentic figures in this maze. Below the head of the whale is what appears to be a looped line attached to a stick, and halfway down the latter is a blade-like projection, but its significance is unknown. At the southern end of the group is a half-shield (the other half having been chopped away by local people), and a bark canoe or crude boomerang. There are ten mundoes or human footprints in the group. Another series of parallel lines is to be seen in the middle of the group. The pool has been enlarged by local residents.

Technique and Preservation. A number of the figures (those on the northern side of the diagonal line in the top left of the illustration) were covered with up to a thickness of one foot of soil in which bushes were growing. When uncovered they were seen to be perfectly preserved outlines of punctures or pits half an inch in diameter and three-sixteenths of an inch deep which overlap in most figures but which in one of the human footprints are up to one-eighth of an inch apart. Some of these punctures are oval laterally. The bark canoe (?) and some of the short lines near it also have punctured outlines. The balance of the figures are smoothed by weathering and by water running over them in rainy periods, but punctures

are discernible in the groups of parallel lines, and it is probable that the outlines were never rubbed. I have drawn attention previously to this smoothing effect of weathering on the outlines and here it is perfectly displayed in the exposed figures.

Interpretation. It is important to note that the two human footprints at the northern end of the group point towards a second group about half a mile away and beside Allambie Road (it is fully recorded but as yet unpublished because of its large size), and further, that the two mundoes above the pool point towards a third group on " Flat Rocks," Allambie Reserve, about a quarter of a mile away (described and figured by Campbell, p. 20, pl. vii, figs. 1-3). These three groups are further linked by a human footprint in the above second group which points towards the Allambie Reserve group. It appears probable, therefore, that these and possibly other groups form part of a ceremonial ground. There are no figures of culture-heroes.

Recorded by F. D. McCarthy, 11th May, 1945.

GROUP 22. THE SPIT. (Plate T, Figure 4.)

This group is situated on a large rock at the base of the hill beside the eastern side of the up-traffic road leading from the Spit to Seaforth. Parish Manly Cove, county Cumberland. There is a splendid view of portion of Middle Harbour from this rock. Unfortunately, part of the rock was cut away during the building of a house on the next allotment and the record of the group is incomplete. It consists of a large fish, 4 ft. 3 in. long, of the groper type, a broad shield, and two boomerangs or sword-clubs. There are lines above the latter which appear to represent part of a human figure. The outlines are punctured, up to half an inch wide, and very shallow. The figures are fairly well preserved.

Recorded by Mr. G. P. Whitley, September, 1943.

GROUP 23. FAULCONBRIDGE. (Plate T, Figure 5.)

Site. " Emu Rock " is situated on the western side of the Great Western Road, between Faulconbridge and Linden, parish Coomassie, county Cook. It is about one hundred yards from the road, on top of a hill which forms part of a spur about one mile west of Faulconbridge. The rock surface extends for some three hundred feet along the eastern rim of a gorge, which is unnamed, and from the site is to be seen an extensive view of the neighbourhood.

Description. There are two series of figures, one at each end of the rock. At the southern end are three mundoes or human footprints (two of a child's and one of an adult's size) then five axe-grinding grooves, two small footprints, six axe-grooves, and another small footprint leading to an emu, and finally four axe-grooves beside a small natural pot-hole. It is interesting to note that the footprints lead round the end of a tongue of soil bearing undergrowth that juts on to the rock. Further along the rock is another natural pot-hole, 3 ft. in diameter and 2 ft. deep, and 12 ft. north of it are three axe-grooves, which are not shown in the diagram.

At the northern end of the rock, and 170 feet from the emu at the southern end, are two more emus in an east-west line. In one of them the artist has utilized part of a water-groove on the rock in the outline of portion of the back. Both of these emus appear to be dead birds, especially the western figure with its twisted neck and body in an unnatural position, but the southern figure is that of a living bird standing in a restful pose. They are all life-size but in the usual stylized manner, with one leg.

Technique and Preservation. The outlines are all punctured. Those of the footprints are up to three-quarters of an inch wide and one-quarter of an inch deep, consisting mainly of a single row of overlapping punctures. Those of the emus are one and a half inches wide and three-sixteenths of an inch deep, and the punctures are made irregularly to secure this width so that they overlap both laterally and longitudinally. The figures are well preserved and are very distinct. They were apparently all done in the same period.

Interpretation. Although no hunters are shown, the group may represent the stalking and killing of emus. On the other hand, the site may be an emu totem-centre showing the tracks of a spiritual ancestor of the clan. The men obviously visited the rock at various times to sharpen their axes.

Recorded by F. D. McCarthy, 5th October, 1944, as a guest of Mr. S. Erickson of Faulconbridge.

GROUP 24. FAULCONBRIDGE. (Plate T, Figure 3.)

Site. This group is situated at the head of a tributary on the western bank of Parker's Gully. This tributary runs parallel with Martin Place Road, and is about a quarter of a mile from its eastern side. Parish Magdala, county Cook. The rock, which is near the head of the gully and forms part of the bed of the creek, is basin-like in shape, sloping downwards from west to east, and on the latter edge is a high, steep face over which the water drops.

Description. The creek flows along the lower northern edge of the rock. At each end of the group is a natural pot-hole with numerous axe-grinding grooves beside it, two more axe-grooves are shown among the figures beside a small pot-hole, two below one leg of the man, and several more beside another pot-hole on a ledge of the rock at the eastern end (these are not shown in the diagram).

The group contains several very interesting and unusual figures. The large kangaroo or wallaby, 4 ft. 6 in. long, is well portrayed just as it is about to place its feet on the ground as it leaps along, but the small one, 1 ft. 3 in. long, is in an indeterminate pose. Below the latter is what appears to be a human figure, 3 ft. 6 in. long, in a vital action pose. It is sexless and headless, has no feet or hands, but has a line running up the middle of one leg and one just inside one side of the body. On the body, an outline, with an oval projection at the top adjoining the shoulder, extends down to the abdomen and up the other side, where it turns inwards to form a tongue and returns to the arm-pit. Another short line extends towards the arm, and an object of indeterminate nature is attached to the end of one arm. This figure probably represents either a spirit or a spiritual ancestor. A few feet away to the west is a man 3 ft. 3 in. long. Although in the usual stylized pose with upheld arms and widespread legs, this figure is a most unusual one. The neck is well defined, the nose is shown, the exceptionally long penis bears a groove which would suggest circumcision, and the testicles are indicated. Three separate pits are shown on the body, and one beside one hand.

Technique and Preservation. The outlines are all of the overlapping punctured type, up to one inch wide and a quarter of an inch deep. The punctures are clearly visible in the large kangaroo. The outlines are now weathered to comparatively smooth grooves. All of the figures are clearly defined and well preserved.

Interpretation. The two human figures suggest a ceremonial site. The close association of the small wallaby with the headless figure is possibly totemic in significance, connected

with the sky-world of the spirits of the dead. On the other hand, the site would be an excellent camping place beside water, but it was probably sacred to the men, who, as at many other sites, sharpened their axes beside the pot-holes. It is noteworthy that circumcision is suggested by several figures among the rock engravings of Sydney-Hawkesbury area, but there is no record that this custom was practised.

Recorded by F. D. McCarthy, 6th May, 1944, as a guest of Mr. S. Erickson of Faulconbridge.

GROUP 25. HAZELBROOK. (Plate T, Figure 2.)

This group is situated on a very small and inconspicuous rock beside a track leading from Hazelbrook to the Grose River, parish Woodford, county Cook. It is about half a mile south of "Trig. Hill," and is near some stone heaps and walls erected by an early settler. The group consists of a human foot beside a line with a triangular end; it probably represents a snake. The foot consists of conjoined punctures half an inch wide, and the snake chiefly of separate punctures, although some overlap, of the same width. It is well preserved. It is possible that a member of the local tribe was bitten on the foot by the snake and the engraving marks the spot.

Attention might also be drawn to an irregularly-shaped rock beside the western side of Queen's Road, Hazelbrook, on which there are up to thirty axe-grinding grooves around a number of natural pot-holes. There is also an engraving of a small slender fish between two of the pot-holes, and a doubtful one of a circle on top of the rock.

Recorded by F. D. McCarthy, March, 1945.

GROUP 26. OLD BOREE. (Plate U, Figure 8.)

Site. This group is situated on a ridge which separates the head of Big Joe's Creek from Old Boree, parish Burragurra, county Northumberland. It is on the northern rim of a saddle and from it there is an extensive view down the valley of Big Joe's Creek and across to Big Yango Mountain. The rock is extensive and flat.

Description. At the southern end of the rock is a group of emu tracks leading inward from three sides and arranged around a curious open figure with straight sides. On each side of the latter figure is a kangaroo or wallaby track. The bottom right emu-track leads away and points towards Big Yango Mountain. At the top of the middle of the rock exposure is a small, shallow, natural pot-hole round which are about six axe-grinding grooves, but it would only hold water during and immediately after rainy weather. At the northern end of the rock, about 80 ft. W.N.W. of the emu-tracks, is the figure of what appears to be a dead emu; its neck is curved round the ill-arranged body, and the legs are not shown, just as though it were dumped on the rock and its outline traced.

Technique and Preservation. The emu-track series has smooth rubbed outlines one inch wide and a quarter of an inch deep. Some are weathered and difficult to discern. The outline of the emu consists of overlapping punctures and is up to one inch wide. It is clear and well preserved.

Interpretation. The tracks and dead bird suggest a successful emu hunt, but the geometrical figure and kangaroo tracks may indicate a ceremonial significance.

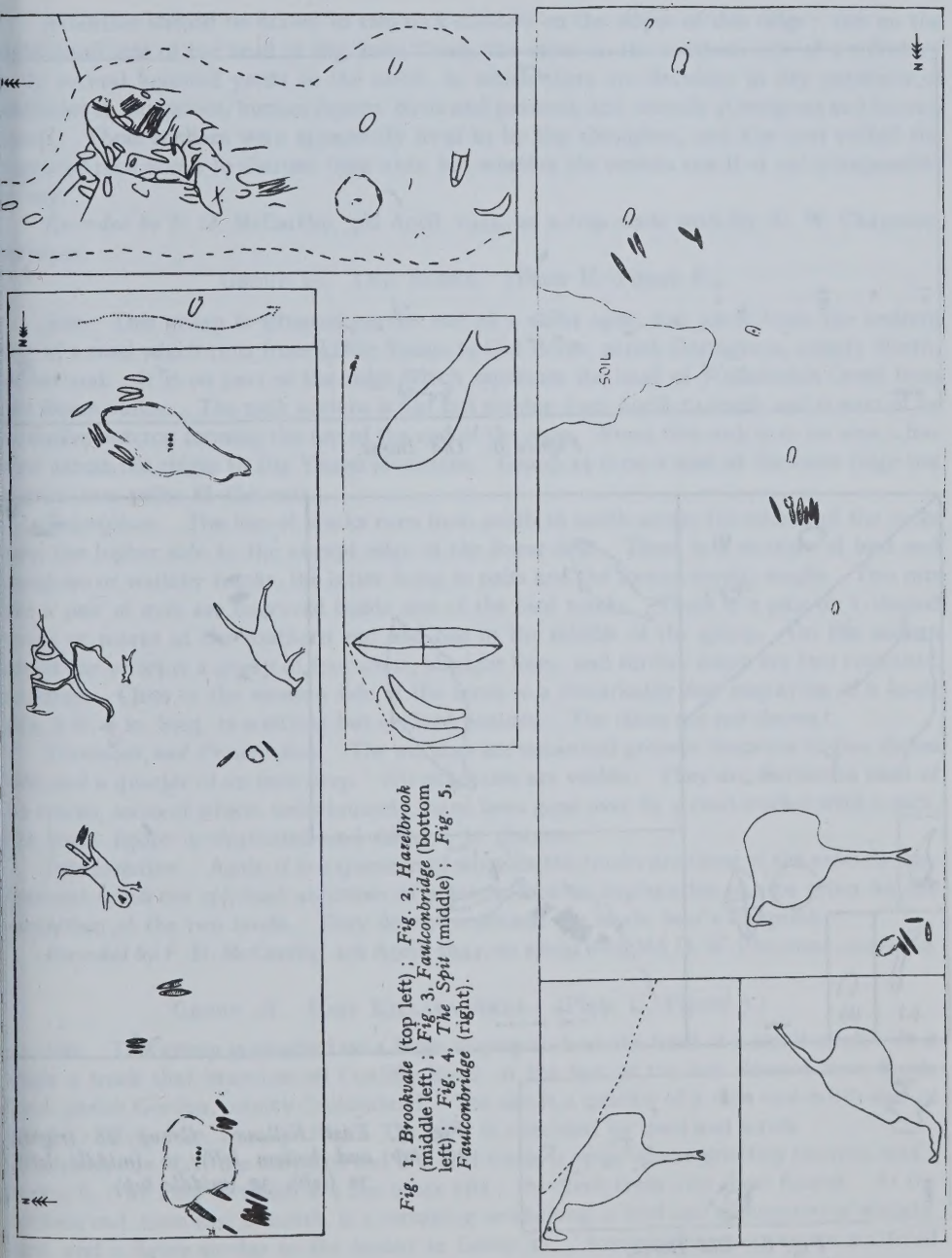


Fig. 1, *Brookvale* (top left); *Fig.* 2, *Hazelbrook* (middle left); *Fig.* 3, *Faulconbridge* (bottom left); *Fig.* 4, *The Spit* (middle); *Fig.* 5, *Faulconbridge* (right).

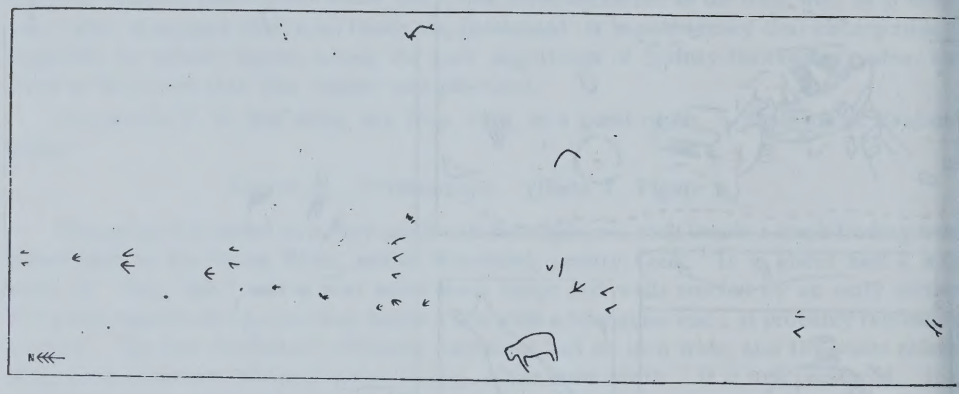
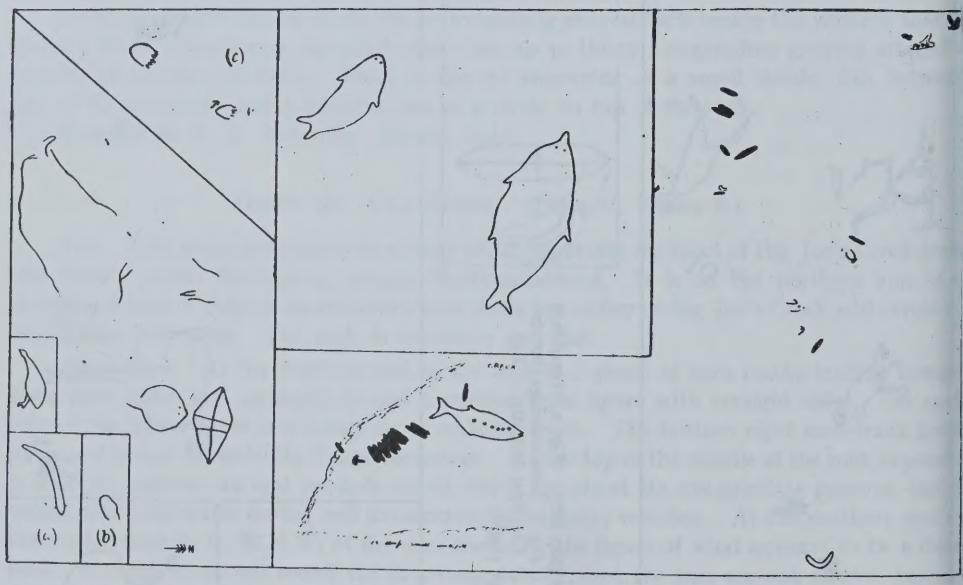


Figure 6. Old Boree.



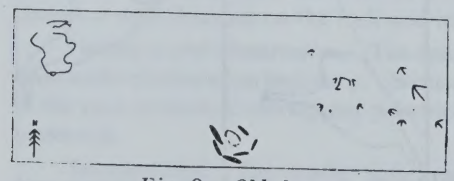


Fig. 8. Old Boree.

Fig. 7, East Killara: Group 28 (right), 29 (top and bottom left) 30 (middle left), 31 (left), 32 (middle top).

Attention should be drawn to two rock shelters on the slopes of this ridge ; one on the right-hand side of the head of Big Joe's Creek, the other on the southern side of a tributary gully several hundred yards to the north, in which there are drawings in dry pigments of wallabies or kangaroos, human figures, birds and goannas, and stencils of weapons and human hands. These shelters were apparently lived in by the aborigines, and the men visited the engraved rock above to sharpen their axes, but whether the women saw it or not is impossible to say.

Recorded by F. D. McCarthy, 3rd April, 1944, on a trip made with Mr. D. W. Chapman, surveyor.

GROUP 27. OLD BOREE. (Plate U, Figure 6.)

Site. This group is situated on the end of a short spur, 100 yards from the western side of a road which runs from Little Yango to Old Boree, parish Burragurra, county Northumberland. It is on part of the ridge which separates the head of Wallabadah Creek from Old Boree valley. The rock surface is flat but sloping from north to south and is part of an extensive outcrop forming the top of the end of the spur. From this rock is to be seen a fine view across the ridges to Big Yango Mountain. Group 24 is on a spur of the same ridge but is over two miles to the east.

Description. The line of tracks runs from south to north across the middle of the rocks from the higher side to the abrupt edge of the lower side. There is a mixture of bird and kangaroo or wallaby tracks, the latter being in pairs and the former mostly single. Two pits like a pair of eyes are engraved inside one of the bird tracks. There is a pair of Y-shaped tracks or marks at the southern end and one in the middle of the group. On the eastern side of the series is a group of four short, straight lines, and further away are two crescentic markings. Close to the western side of the series is a remarkably fine engraving of a koala bear, 2 ft. 6 in. long, in a sitting but stylized posture. The claws are not shown.

Technique and Preservation. The outlines are smoothed grooves from one to two inches wide and a quarter of an inch deep. No punctures are visible. They are distinct in most of the tracks, some of which, unfortunately, have been gone over by a road-worker with a pick. The koala figure is weathered and difficult to discern.

Interpretation. Again it is a question of whether the tracks are those of the animals they represent or of the spiritual ancestors of a totem, but no explanation can be given for the association of the two kinds. They do not represent the koala bear's footprint.

Recorded by F. D. McCarthy, 4th April, 1944, on a trip with Mr. D. W. Chapman, surveyor.

GROUP 28. EAST KILLARA AREA. (Plate U, Figure 7.)

Site. This group is situated on a large sloping rock at the head of a small creek. It is beside a track that branches off Cunliffe Road, at the foot of the first descent from Koola Road, parish Gordon, county Cumberland. The site is a quarter of a mile east-north-east of Group 12 (McCarthy, 1944, p. 164). The view is restricted by trees and scrub.

Description. At the southern end is a bird-track, a series of axe-grinding grooves, and a mark 4 ft. 6 in. long on which is a line of six pits ; the creek flows over these figures. At the northern end, from east to north, is a returning boomerang, a bird and a kangaroo or wallaby track, and a figure similar to the basket in Group 11. Axe-grinding grooves are scattered throughout the group.

Technique and Preservation. The outlines are punctured, but some have weathered and have a smoothed appearance. The shark is clearly defined and well preserved, and the others are distinct.

Remarks. The bird-track at the southern end of this group, and one in Group 11, point towards each other and thus link these two groups. The shark is well portrayed.

Recorded by P. Slack, 24th August, 1944.

GROUP 29. EAST KILLARA AREA. (Plate U, Figure 7.)

Three scattered sites in the county of Cumberland. Figure (*b*) is an oval (human footprint ?) situated near Rocky Creek about a quarter of a mile from Middle Harbour Creek, and the same distance north of Soutar Trig. Station. It is engraved with a punctured outline on a rock over which water flows. Parish Gordon. Figure (*a*) is situated about 300 yards north-north-east of High Knob, and on top of an incline 100 yards from the junction of the Manly Pipe Line and Middle Harbour Creek. It is an eel with a punctured outline very well preserved. Parish Manly Cove. Figure (*c*) is situated 150 yards from the Manly Pipe Line, at a point the same distance west-north-west of Soutar Trig. Station. The rock is small and uneven, and is situated on a track. The group consists of two human footprints with toes, a bird-track at the heel of one, and a short line in front of it. The outlines are punctured, and the bird-track is smoothed, probably by weathering. There is a clear and extensive view from this rock. Parish Gordon.

Recorded by P. Slack, 26th August, 1944.

GROUP 30. MT. CARROLL TRIG. STATION. (Plate U, Figure 7.)

Site. This group is on a rock in the bed of a creek which rises in a marsh between Mt. Carroll and the next hill southwards. It is about 150 yards above the tidal limit of Middle Harbour Creek in parish Manly Cove, county Cumberland. The site is surrounded by scrub and reeds and there is no view.

Description. The group consists of an incomplete whale (?), and another incomplete figure above it, both well preserved, a broad bark shield bearing two transverse and one longitudinal lines (usually painted in red on the shields), and a stingray with incomplete tail. The two latter figures are weathered and indistinct. The outlines in all figures are punctured. They appear to be purely artistic reproductions without any sacred significance.

Recorded by P. Slack, 26th August, 1944.

GROUP 31. FRENCH'S FOREST ROAD. (Plate U, Figure 7.)

This figure of an emu is engraved on a rock about one mile along French's Forest Road from its junction with Telegraph Road. It is 40 feet from the eastern side of the road, 150 yards south-east of a group described by Campbell (pl. viii, fig. 16). The situation is open with a wide view to the east and west. The figure is poorly drawn, but it has a very thick leg on which the profile of the foot is shown. The grooved outline is smooth. Parish Manly Cove.

Recorded by P. Slack, August, 1944.

GROUP 32. BARE TRIG. STATION. (Plate U, Figure 7.)

These two figures, a shark and a bottle-nosed dolphin, both approximately life-size, are engraved on a very large rock situated halfway down a hill, half a mile west of Bare Creek and three-quarters of a mile west of the Trig. Station. The rock is covered with lichen, and there are hundreds of natural pits inside the porpoise. Both figures are well portrayed, and their outlines are punctured. Parish Manly Cove.

Recorded by P. Slack, August, 1944.

Campbell, W. D.,1899. The Aboriginal Rock Carvings of Port Jackson and Broken Bay. *Ethnol. Mem.* 1, *Geol. Survey of N. S. Wales.*
McCarthy, F. D.,1941. Records of the Rock Engravings of the Sydney District, Nos. I-VII. MANKIND, III, 42-56; Nos. VIII-XX, MANKIND, III, 161-71, 1944.
———— 1943. Catalogue of the Aboriginal Relics of New South Wales. Part I. Rock Engravings. MANKIND, III, 91-99; III, 121-27.

Australia : Archæology. **McCarthy.**

Notes on Some Unusual Cylindro-conical Implements. *By Frederick D. McCarthy.*

The specimens described are in the collection of the Australian Museum.

E.12645 (Plate V, Fig. 4). A phacoid stone, with cupped base. Practically the whole of its surface is covered with tool marks, from 1-4 cm. long (the majority from 2-3 cm.), and up to 3 mm. wide. They are shallow but clearly defined, and each groove ends in a sloping step. In addition, there are several ridges and grooves in each tool mark, indicating that a toothed implement was used. It is possible for them to have been made with a stone implement with a narrow chipped edge such as a slug adze-flake. The curved lateral margins of the implement are pecked, and some of the pittings are elongate. It is 21 cm. long, 11 cm. wide, 7 cm. thick, and is made of argillaceous sandstone. It was collected by the late R. Etheridge, Jr., on a claypan between sandhills at the southern end of Lake Wangalarra, Cultow's Holding, Darling River, New South Wales.

E.51116 (Plate V, Fig. 2). A symmetrical cylindrical stone truncated at each end. Both ends are oblique, very slightly convex surfaces. The surface of this implement is smooth, but bears a series of waves extending from one end to the other which were not ground down when it was made. The only incised markings present consist of a collar of short incisions, each about 5 mm. long, round one end. It is made of red sandstone, and is 37 cm. long, 9 cm. wide, and 7·5 cm. thick. This unusual specimen was collected by Mr. H. Giblin at Victoria Lake, Albemarle Station, Darling River, New South Wales.

E.8514 (Plate V, Fig. 3). A cylindrical piece of grey granite, the surface of which was rounded by pecking and then polished. The two ends are rough, untreated fracture faces at a slightly oblique angle. It is thicker in the middle than at the ends. Groups of pittings, produced by use as an anvil stone, are present on several parts of the surface, but this function is of a secondary nature. It is 31 cm. long and 9·5 cm. in diameter in the middle. This implement, the principal function of which is unknown, was purchased from Mr. H. Richards in 1899. It is registered as a seed-crusher, Western Kimberleys.

E.51085 (Plate V, Fig. 1). This specimen is a hardwood club with a cylindro-conical head. It is 93 cm. long, the head is 6 cm. in diameter and the handle 3·5 cm. thick. It is decorated in an unusual manner. Extending from its tip are ten pairs in opposite groups of

broad grooves, apparently burnt-in to the wood, and there are from ten to eighteen rows in each group. The grooves vary in length from 5-15 mm., and in width from 2-3 mm.; some are joined together at their ends. Elsewhere the head is covered with pittings made with the end of a file or similar metal implement. The handle is covered with grooves arranged in nine vertical rows. This specimen was obtained by the late C. J. McMaster in the Brewarrina district of New South Wales about fifty years ago. Its cylindro-conical head and decorative markings are of particular interest in reference to the cylindro-conical stones from western New South Wales and elsewhere. A perusal of the illustrations in Black's *Cyclons* (1943) will reveal the similarity in the markings; on these stones are commonly seen groups of incised lines both on the sides and round the tip, as on this club. The pittings occur usually in a single vertical row and not as a field on the stones.

The significance of the occurrence of similar markings on the cylindro-conical stones, about which the natives whom the white man first met and their descendants appear to know nothing, and on a wooden club made in recent times, is of some importance. At the present time, however, we can only conclude that the art design is a traditional one applied to wooden objects in recent times, and it does not necessarily prove the use of the stones by the same people.

PLATE V.

Melanesia : Ethnology. **Austen.**

Notes on the Food Supply of the Turamarubi of Western Papua. *By Leo Austen.*

The Turama is one of the great rivers of western Papua and has its source on the slopes of one of the peaks called *Biwau* of the Leonard Murray mountain. The estuary of the Turama is funnel-shaped, and is many miles wide across its mouth. At new moon and full moon, especially during the south-east season, the Turama is subject to a tidal wave or " bore " which travels up the river for some sixty or more miles.

Along the estuary of the Turama live the Turamarubi or Turama people. They are divided into six tribes known as Doriomo, Umaidai (including the Auwarubi), Wariadai who live along the western bank, Morigi and Haragu on Morigi Island, and the Nabio whose village is on the eastern bank near Jukes Point.

Each tribe has its villages in one or more long communal houses which are divided into sections occupied by various totemic clans. It is not the purpose of this article to delve further into the social organization as it will form the subject of a subsequent article. The Turama native's life is bound up in his various dances and ceremonies, and he finds that most of his daily work has some connection with his ceremonial life.

The rainy season of this district is mostly between May and October, and during this period the natives are more or less confined to their own village lands and to those places accessible by canoe. It is during this time that many *bagoi* head-hunting dances take place, and inter-village visits are made to enjoy reciprocal hospitality when their ceremonies are due.

All ceremonial dances entail a great deal of preparation, and for these many sago palms must be felled, some to be used for the production of sago flour, others to be left as a breeding place for the sago grub. The sago grub (*gemi*) is the larva of the coconut beetle locally known as *kotami*. It is collected just before it reaches the mature beetle stage, and millions of the grubs are eaten every year on the Turama.

During this time various ritual observances must be kept, and wild pigs and other bush animals must be hunted several days prior to a dance. The native hunter requires supplies of arrows, most of which he makes himself, but the fighting arrows are usually purchased from the Kasere bush tribes living between the Turama and the Paibuna rivers. The bows deteriorate rapidly and they must be kept in good order during the damp humid weather, otherwise it is necessary to make a new one from either bamboo or black palm.

The wet season is also the time when the native attends to many minor duties, such as the manufacture of plaited armlets and dance ornaments, and towards the end of the " rain-time " he makes his canoes. He is also not averse to joining another village if he has received an invitation in a head-hunting expedition. Villages to be attacked at this time must be situated close to the rivers, the distant communities being left until the land is less flooded.

The native is not used to sustained effort, and he has frequent spells from his labours. I might mention here that this point is rarely brought up in present day discussions on the renewal of civil administration, but it is one that will have to be considered if native wages are to rise to any great extent.

The women-folk are the main food-gatherers. To them falls the hard work of extracting the flour from the pith of the sago-palm. In ordinary time, the felling of the sago tree is women's work, but during dances and some ceremonies, the men do most of this work because

of the large quantity required. I have never known the felling of the sago tree to be looked upon as women's work in Kerewo, Baru, Bamu and Kiwai, or in any other Papuan tribes I have visited. The women also open the fallen sago trees to collect the numerous sago grubs, and it is possible there is a fertility significance attached to this practice. The search for crabs, crayfish, mudfish and many species of molluscs in the mudbanks of the creeks and rivers and the setting of conical and thorn-lined fish-traps, all fall to the lot of women. In fact so many duties do they perform that the claim might be made that the men are dependent on their women-folk for their subsistence; in return, however, the men provide protection, and add meat, and the large fish which they spear, to the food supply. The men also grow a few luxuries in their garden so that now and again they can bring home a bunch or two of bananas, or a couple of sticks of sugar-cane. Garden produce does not, it might be mentioned, constitute the staple food, but is purely a luxury in this area.

The women, of course, cook the food for the husband and children. Wives are busy persons and they appear to enjoy their work. Where there are two wives, each vies with the other in producing tasty morsels for their joint husband's meal, and if he accepts his food from one particular wife too frequently the jealousy of the other one is aroused and trouble ensues. The women are not to be regarded as drudges; they have a great deal of time to themselves for their personal interests. So dependent is the husband upon his wife, however, that in the event of an attack, his first thought is for his wife—to escape to the bush with one's wife is courageous; but to flee alone is the height of absurdity!

The staple food of the Turama native is sago cooked in a node of bamboo, and this forms the daily meal. If the husband has introduced a "spinach" called *uhe* into his garden, his wife will mix a few of the leaves with the sago flour before cooking it. If there are plenty of leaves available, she might even cook a whole node of these tasty but oily leaves for him. Among the Kasere bushmen, this "spinach" is much more plentiful, and they use a great quantity of it with their evening meal. The Kasere live on firm ground, where they make larger gardens. It was noticeable that among the Kasere there were not nearly so many sores and yaws among the children and I put it down to the quantity of these leaves that were eaten.

Sago-grubs (*gemi*) are considered most succulent, and though they are eaten at odd times during the day, they are considered a delicacy at feasts when all gorge themselves to their utmost. As the sago-grub plays such an important part in the diet and ceremonies of these people, perhaps an account of the life history and the method of collecting the grubs will not be out of place.

The *kotami* or Red Palm Beetle (*Rhynchophorus ferrugineus* (?)) is an inch and a quarter long, deep silky-black in colour, tipped here and there with rust. Its proboscis is very similar in shape to an elephant's trunk. The eggs are laid in a hole which the beetle bores with its proboscis in the stem, or in the soft tissue of the leaf-sheath, and it appears to make use of cavities in the hard outer bark. The natives, who are keen observers of natural history, help the beetle in its endeavours to find a suitable place to lay its eggs by splitting the trunk of the sago palm and thus providing entrance to the soft pith. But if you ask a Turama native if the *kotami* beetle lays eggs which develop into sago-grubs (*gemi*), his answer is: "No, the sago-grub develops into the *kotami* beetle, which flies away. We do not know

where the sago-grub comes from. It is just there." One often comes up against this contradictory attitude and lack of understanding of problems associated with procreation.

When the natives are engaged in a dancing-ceremony, the *gemi* grubs are essential for the feast. Numerous sago palms are therefore felled by the men and left to lie on the ground in the sago-swamp. Normally, in extracting the sago, the bark is stripped down one-half of the trunk ; on the trees selected for the collection of grubs, however, the bark is slit down the full length of the tree, and in the crevices deep holes are made with a *kemeha* or spear-bladed stick of black palm. The fibres of the sago-pith are torn slightly apart to form narrow passageways to the middle along the whole length of the trunk. The crack is then covered with some sago leaves to prevent rain from penetrating to any great extent. The larvæ feed on the pith, and about four to five weeks after the tree is cut down they are fully grown and begin to make a cocoon out of the fibrous tissues. When the natives can hear the larvæ, called *gemi*, making their cocoons, they are ready for gathering. Otherwise, the cocoon is completed, and by the tenth week after hatching the larva's skin splits down the centre of the back and drops into the bottom of the cocoon. The pupal stage is known as *gaugau*, and is also eaten apart from the hard inedible tissues.

Gradually, the *gaugau* assume the fully developed form of the *kotami* beetle, and about three and a half months after the laying of the egg the beetle is ready to fly from its home. The sago pith, in the meantime, has fermented and softened, so that it is a simple matter for the beetle to find its way out.

The women gather the *gemi* grubs, of which many hundreds may be found in one tree. They break open the bark and pith with a *kemeha* stick. The grubs, which are usually in their cocoons, are sleek and fat, and all but the tiny horny head is eaten.

The second part of the song of *Guri* is full of references to the *gemi* grub, and no doubt the sound of the grubs making their cocoons gave rise to line 4 ; *au benare au kedare*, especially as the grub, when taken away from its habitat, wriggles continuously, and might convey the impression of being frightened.

The pupal stage seems to be referred to in the *Epia* ceremony, when the *hoboro* pandanus hood worn by young girls is slit from the middle upwards and downwards by a youth and she emerges into the world of life again. This part of the ceremony is certainly reminiscent of the adolescent grub shedding its skin as it develops into the fully-fledged *kotami* beetle. As a matter of fact the whole *epia* ceremony is more than probably a fertility rite in which the *gemi* grub plays a large part.

The dry season, when the north-west (*hurama*) wind blows, is the native's busiest time. He finishes his new canoes, or begins cutting out a hull in the forest. He repairs his house, and undertakes trading expeditions. In the pre-white days, head-hunting was the great pastime of the north-west season, especially if the ritual observances for a new *darimo* (long-house) had not been completed owing to the lack of some unfortunate visitor who could be offered up as a sacrifice. During the dry months, camps are made at the headwaters of creeks to collect the skins of the *kepusu* snake (*Achracordus Papuanus*), which are used as a tympanum for their drums, a most useful article of trade.

Where there is good firm land, and there is not too much of it along the banks of the Turama, gardens are made. The average garden is small and produces bananas, native spinach, sugarcane, *mimia* (the spadix of a wild cane), and a few taro of poor quality which

appears to be an indigenous species. The Kasere bushmen grow better kinds of taro, whic are finding their way into the Turamarubi gardens. The taro is losing some of its value as totem because of the prohibition against eating it ; those who have the local taro as a toter get over the difficulty by saying that the introduced taro cannot be the same as their totemi one.

Guri is apparently a hero from the north-west who led a great migration over Mt. Leonar Murray to the Turama, and he is considered to be the promoter of agriculture. In one of th legends the mythological hero known as Sido or Hido meets Guri on the Turama opposite th Umaidai villages. From Guri, Hido obtained many varieties of garden produce in exchang for fire, and he distributed the plants among the various coastal tribes during his retur journey westward towards Wabuda in the estuary of the Fly River.

The coconut is not grown very much among the Turama except on Morigi Island. Th only legend known to me that is connected with the coconut is a short one stating that the firs coconut came from Goari-Bari Island east of the Paibuna River.

How can we help these primitive food-gatherers ? We certainly cannot remove then from their muddy strongholds, because such an action would result in their extinction. Th Murray regime practically stamped out head-hunting, and the head-hunting dances of whic *gemi* grub feasts formed part are gradually dying out. It is worth noting that the fat fron these grubs was beneficial to the health of the natives, and it is to be hoped that they wil continue to use them as a food. The native regulation dealing with the planting of specifi numbers of coconut-palms by the villages should be applied to this region to ensure that larg enough numbers of nuts will be available for domestic purposes. Coconuts will grow well i planted where the tidal waves cannot wash them away, or where the banks are not eroded b the lunar " bore." A new breed of pigs could be introduced to overcome the ancient pro hibitions against the eating of pork by some of the age groups. Cattle of course cannot b introduced, so the Turama people will have to depend for their flesh foods on the wild o domesticated pig and fish.

Of garden land there is little available in the Turamarubi's own territory. Land migh be purchased from some of the inland neighbours as near to the estuary as possible for use b the various tribes for gardens ; supplies of suitable seed taro, taitu, and other tubers coul then be sent to them for planting. Better types of spinach, such as the New Zealand variety and other vegetables such as the tree-pea (*Cajanus indicus*), the choko, the egg plant and othe suitable kinds could also be introduced and the people given instructions in their cultivatio and cooking. Fowls might also be kept near the gardens, but the natives would have to b taught to protect the nests and chickens from pigs, which eat them.

Arrangements could be made for the Kiwais to instruct the Turamarubi in their mimeti dances to take the place of some of the latter's dances now falling into decay. A mission coul be established on the middle Turama to give them a religion to take the place of their ancien head-hunting cult.

Australia : Linguistics. Worms.

The Aboriginal Mind at Work : Semantic Notes on Australian Languages. *By Ernest A. Worms, P.S.M.*

The linguistic research work of Dr. H. Nekes and myself among the tribes of northern Western Australia is slowly approaching its final stage after tedious labour in the field and at home for over ten years. I will pick out only two words* from the treasure-box of our bulky collection to show the ability of the Aboriginal mind in expressing ordinary or complicated happenings of the private, social, ethical and religious sphere of daily life, handling the fundamental meaning of words in a clear and logical way.

I. GENJDJ.

This first word, *genjdj*=blocked, blocking, gives us an idea of the extension of the original meaning of a native word which might surprise us if we have failed to grasp the underlying, unifying association of thoughts which the Aboriginal has in his mind. It will become clearer when we compare the following sentences.

(1) *genjdj wan-am maiar* (lit.) blocking put the hut=close the hut=put a piece of paper-bark into the entrance of the hut.

(2) *lamaman-en bor djaman genjdj in-am* (lit.) mist country whole blocking it puts= mist blocks the whole country.

The unifying idea in both cases of *genjdj* is the erection of an hindrance ; in the first case by a person against the invader of the hut, in the second case by the mist against men invading the country.

The next two sentences were heard in off-hand conversation showing an interesting application of the old physiological term to a new physical circumstance :

(3) *genjdj ŋan-djed-* (lit.) blocked I say=I have constipation.

(4) *baib djan genjdj in-djed-* (lit.) pipe my blocked it says=my pipe is blocked.

II. MA-BANDJEN.

The fundamental meaning of this intransitive verb is in the material sense " to exchange, to give a thing and to receive another for it," and in a derived and moral sense, " to surrender, to sacrifice, to love."

(1) When a man had been lucky on his hunting expedition a woman who had collected an abundance of yam, etc., would say : " *yanga bandj mai djai-* (lit.) We (dual) will exchange food our=Let us exchange our food."

(2) The next two applications of our word are rather profane, but still instructive for understanding the correct proceeding of the native mind. The action of a person turning over while lying down is expressed in his language as an exchange of his position : " *dibir bandjen-* (lit.) turning he exchanges."

Scratching is usually the response to a local irritation, giving relief ; a bilateral correlation, indeed. This fact is perceived by the blackman saying : " *wer wer ŋa-bandjen-* (lit.) I exchange the itching *sc.* by scratching."

* Of the tribes of the Djaber Djaber and Nyol Nyol of the Dampier Peninsula, Kimberley, W.A.

(3) This word has also a legal signification, namely in a matter of atonement for an offence against native law, e.g. that of avoidance, called *yaler* or *rardjen*. The female offender will approach another woman, saying to her: " *ŋa-bandjen dje ; wan-dab ŋai-* (lit.) I surrender myself to you ; hit me ! " Here we have a moral exchange, the voluntary surrender of life and health to the personally chosen punitive executive power of another person to secure legal reconciliation. When the blow of the heavy club has fallen on her head, and blood has flowed, public opinion is satisfied, and the displeasure of the supernatural law-giver is effaced.

(4) But the development of meaning of *ma-bandjen* goes deeper, viz. into the spiritual sphere. French fathers gave the natives their first instruction on sacramental confession. The latter changed this foreign word " confession " according to their own phonetics into *gombedjon*.* Later on, having observed that on this occasion the penitent talked to the priest in a low voice, they named it fittingly " *ŋogor ŋogor*=murmuring." But then understanding more clearly the essential idea of this institution, they drew a parallel between, on the one side the exchange of their rueful accusation with the absolution of forgiveness, and, on the other side, their old customary self-accusation and reconciliation (as in No. 2), calling the auricular confession *barai bandjen* : " *barai ŋa-bandj dje ibal-* (lit.) self-accusing I surrendered to the Father=I confessed to the Father." The original conception received a new, but logical extension under the influence of a new culture. This happy linguistic development was reached by leaving it entirely to the native mind to ascend by the usual logical steps from sensitive experience to the essential.

(5) When a native has to suffer by the exchange, or when he has to deliver himself to the sheer mercy of another he will still use this verb. For instance, he does not like to go out in the rain that " pierces " his naked skin. If he is forced to do so and to throw away the protecting sheet of paper-bark, he will say : " *ŋa-bandjen djen wōl-* (lit.) I surrender myself to the rain=I have to go out into the rain."

(6) The necessity of making sacrifices has not been spared to primitive communities. Sacrificing is really the voluntary exchange of a minor object to obtain a greater good, or to avoid a complete loss, and *ma-bandjen* is used in this case also.

When a police-patrol approaches a native camp to kill some of the numerous dogs, the blacks, usually informed well beforehand, will take the finest animals deeper into the bush to save them. But a few natives have to remain with their dogs and allow some to be killed. Sadly, but with a rascally smile, a native woman complained : " *bor ŋam bandj warindjer yēl-* (lit.) sacrificing I have surrendered one dog=I have sacrificed one dog " (thinking to herself, " . . . but I have saved a dozen others "), glad that her favourites had escaped the bullets.

(7) The most attractive derivation of the main-meaning of *ma-bandjen* is that which is used for family-love. Loving is expressed by the aborigines as " exchanging hearts—*lēar ma-bandjen.*"

When the black mother fondles her baby she will remark : " *bād eŋer-bandj berai bāb-* (lit.) Embraces they exchange mother child=Mother and child are embracing each other."

How unqualified an offence to deny the primitive man his appreciation of family-love

* *gombedjon* demonstrates three phonetical facts :
(1) Dental *n* changes to labial *m* in assimilation to following labial *b*.
(2) Fricative *f*—impossible in Australia—changes to the corresponding plosive *b*.
(3) Sibilant *ss*—impossible in nearly all Australia, except in Cape York—changes to palatal *dj*.
Other grammatical fineness can hardly be described in a short article.

Melanesia : Archæology. England.

The Ramu Stones : Notes on Stone Carvings Found in the Annaberg-Atemble Area, Ramu Valley, New Guinea. *By Peter England.*

I paid my first visit to the middle Ramu Valley early in 1942, and my interest in these primitive stone carvings was aroused on being shown a carved stone basin or mortar by the Rev. Zeigler, then in charge of the mission station at Atemble.

Since that date, during several terms in the same locality, I have been fortunate in discovering a number of other examples, the gem of which is a carved female figure (Plat W), which is, to the best of my knowledge, unique.

One thing all these stones have in common : their origin is unknown. It seems certain that they were the work of a people who have either died out, or who long ago migrated to other lands. The present inhabitants of the valley have no knowledge or tradition of stone-carving, and the only explanation they can give of the presence of these objects is that they were brought there by the legendary *masarai* (spirits) of the valley.

In most cases certain magical qualities are ascribed to the stones, and a number of legends have been built up around them. But it is worthy of note that they play no part in the semi-religious beliefs and ceremonies of the tribes at present living in the area.

Nearly all the stones were found lying in the bush away from the villages. Although their location was known to many of the older people, and they were regarded with some veneration, it was not considered propitious to bring them into the village or house-tambaran—the usual repository for articles of superstitious regard. The *masarai* had deposited them in these places : it would be unwise to court displeasure by moving them.

Hence, when I had collected some of them together, I complained of the constant leaking of my thatched roof, the old men assured me that this was a to-be-expected consequence of keeping the stones in the house : they liked the open air and the rain, and roof or no roof, they intended to have it !

The stones may be divided, roughly, into three classes :

(1) Mortar-like basins of various sizes (one weighs nearly three hundred pounds) and with varying amounts of decorative carving on the outside rim.

(2) Discs of an average diameter of 17-23 cm. with a hole in the centre. One specimen has fluted carving, but the others are plain.

(3) The carved figure already referred to. No other specimen or fragment of anything remotely resembling this has been discovered, apart from the small human figure described by Thorpe (1930), nor can any information be obtained as to the existence of similar work.

The carvings are in an unidentified stone of varying degrees of hardness. Weathering has given them the appearance of a hard sandstone, but this is belied by the excessive weight. Identification of the type of rock may help in tracing possible areas of origin.

As regards (1), similar objects have been found in various parts of New Guinea and Papua, and the concensus of opinion seems to be that their original purpose was as a mortar, probably for grinding some form of grain.

The discs of class (2) are not, I believe, quite so widely distributed or known. Similar articles have been noted in several areas in present-day use as club heads. It would be

interesting to know if these are of contemporary manufacture, or are heirlooms from the age past. There is a possibility that they have been used in some areas as coinage.

Both the foregoing are apparently articles of utility, but the female figure (3) can only b regarded as a pure work of art, with possibly some religious significance. It presents th figure in a squatting or huddled attitude, with the knees turned inwards and the hands acros the stomach. There are three fingers on each hand and three toes on each foot. Circula pits with raised rims represent the eyes, mouth and navel. The mouth is an upturne crescent, the nose a vertical ridge, and the ears are elongate as though ornaments might b suspended from them and they extend down the cheeks. The general expression is one o sardonic humour or cynicism. There are three armlets on each upper arm, a girdle round th waist, and what appear to be indications of a headdress on the forehead. The whole of thes bodily and facial features, and the ornaments, are represented by convex ridges or modelling The base is conical and well shaped, and the top of the head is a thin ridge. The figure i 44 cm. long, 22 cm. wide and 8 cm. high. It is made of a hard igneous rock, probably andesite On the back is a design consisting of two linked circles at the top, which are separated by tw dividing lines from a geometrical maze in the middle panel, and below the girdle are two spirals These motives are represented by convex ridges also. As in all other cases, the origin o this figure is quite unknown. It was found in the bush near the Lau village of Sabu, some tw or three miles from Annaberg in the Ramu Valley. Only one old man knew of its exac location, although several others knew of its existence. Tradition credits it with the powe of locomotion, and it is reported on at least one occasion to have used physical violence on native who failed to treat it with proper respect. It was also regarded as a charm to brin success in the chase.

It might be remarked that in the depiction of the face the art style of this ancient ston figure is somewhat similar to that of wooden carvings from the Sepik River, the Papuan Gul and other localities in New Guinea, in which the mouth is a crescent, the nose a straight lin and the eyes circular, in relief.

It is unlikely that it is the only example of its kind. I believe that thorough field wor in the area, particularly amongst the little-known people of the Schrader Range, might resul in further discoveries, and possibly some clue to the identity of the artists. It presents challenge : who were the sculptors, were they identical with the carvers of the mortars an the discs, was it carved in its present location, or was it brought thither by the members o some migratory movement of long ago, what, if any, was its religious significance ? Th quest is a fascinating one, and one to which I hope to devote some time when conditions o peace return. In the meantime I would be very interested to get in touch with anyone wh has found examples or traces of similar carving in other parts of New Guinea.

Other naturalistic figures of this ancient stone-working period, all fashioned by pecking might be mentioned. Barton (1908, pl. A) described a remarkable pestle in the form of bird with a very long neck, its total length being 36 cm. The head is snake-like and the eye are in relief. It was found by a gold-miner, about forty feet above the present bed of th Aikora River, under ten feet of alluvial sand and clay. This pestle was later figured b Firth (1936, p. 44). Etheridge (1908, pp. 26-27, pl. vii) described a figure from the uppe Giriwo river, a tributary of the Yodda valley ; it consists of a marsupial-like animal, probabl a cuscus, clinging to a conical-shaped stone which has a concave flattened area on one side

Carved Stone Figure from the Ramu Valley, New Guinea.

It is 36·5 cm. high, 15 cm. wide, and weighs 17 lb. The eyes are denoted as a ring with a pupil in the middle. Thorpe (1930, pp. 352-53, pl. LVII, figs. 2-3) described a small human figure mortar of diorite-porphyry from Manam or Vulcan Island. It is a male, with an encircling girdle round the hips, short legs, and the hands clasped (though no fingers are shown) under the chin. The ears and eyes are bosses and the nose is in relief, with the nostrils indicated. The arms end on the back and there is a small oval depression on each one. The mortar depression occupies the place of the belly. This figure is 15 cm. long, 8 cm. wide, and 7·5 cm. thick. It was at first claimed to be used by the natives for grinding abortion herbs, and subsequently for the crushing of areca nuts for the old men who had no teeth. Sherwin (1938, figs. 3-4) described a cockatoo's head and a human head, both of which might have been the tops of pestles, from the Wild Bros. mine on the Watut river. Both figures are small in size, being only 9 and 6·5 cm. long respectively. They were found on a blue clay bottom under fourteen feet of overburden. The cockatoo's head is in andesite, and the human head in schist. Bramell (1939) also described these two specimens, and in addition two remarkable mortars from the Wahgi valley. One is a large bird, the tail and wings of which are represented by three projections with rows of bosses on the outer face, while another projection forms the head, but unfortunately the beak is missing. This is a symmetrical and skilfully fashioned mortar, 47·25 × 36·5 cm. in size, 13·5 cm. thick, and 50 lb. in weight. The other example is of beaker-shape, being 16 cm. high and 21 cm. in diameter, with a deep interior. On its base is carved in relief a bird-like figure with a long tail and outspread legs. There are also five bosses round the lip.

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NOTES AND NEWS

The Gallery of Natural History and Native Art. *By Mr. Mel. Ward.*

The establishing of this culture centre at Medlow Bath represents the realization of a dream long cherished. It had been planned for many years to open my own museum-study centre wherein the general public might have the opportunity to examine various types of natural history collections.

During early collecting trips to tropical Australian localities and to the Pacific Islands, I realized that the arts and crafts of the native peoples were dying fast, so I began a hobby collection of ethnological relics. During the war this part of the collection has been greatly added to by the acquisition of the St. Joseph's College Collection, the bulk of the Sir James Burns Collection, the Josephi Collection, and others.

In conjunction with relic collecting I have bought relevant literature so that a person visiting the gallery may delve deeply into any section with the aid of the essential books contained in the library. Rare Australiana is also being collected and at the time of writing the library contains an almost complete Australian Aboriginal section, and one on Australian exploration and early diaries. There are books on every island group in the Pacific, on world-wide mythologies, folklore and general anthropology. Zoology is covered by an extensive series of books, in many instances unique works imported from overseas before the war. Among the treasures of this section is John White's personal copy of his "Journal of a Voyage to New South Wales," a complete set of Gould's "Birds of Australia," and one of his "Mammals of Australia." There is a section covering the history of museums which includes a unique copy of the catalogue of the Portland Museum priced throughout at the sale.

A special section of the library has been established for the history of the Blue Mountains and it contains documents, maps, photographs, tourist brochures, etc. Similarly, there is a history of Sydney in maps, pictures and photographs. These are not yet on display owing to lack of space, but when our permanent building has been erected there will be a library-reading room to house this collection.

My own marine collections are housed here and we have begun an Australian-wide campaign for collecting insects, arachnids and reptiles by advertising in country newspapers and purchasing material sent in as a result. At present the field collectors include four in Queensland, one in north-west Australia, two in central Australia, five in Western Australia and one in South Australia. Outside the continent we have one collector in the New Hebrides, one in the Solomon Islands, one in New Britain, two in New Guinea, one in the Philippines and one in Fiji. Exchanges have been carried out with scientific institutions in many parts of the world before the war and this activity will be resumed after hostilities cease.

The anthropological collection is arranged in sequence from the Tasmanian natives throughout Australia, then to New Guinea and the South Sea islands, progressing from one culture to another and showing the gradual improvement of material culture. The climax is a display of Chinese arts, needlework, carvings, metalwork and weapons.

The historical section includes convict relics and three relics of Captain Cook. At time of writing there are two thousand seven hundred and twenty-five anthropological specimens in the collection.

Collections of photographs showing native types, scenery, villages, maps and diagrams

are also being brought together to augment the collections of relics.

The Gallery is opened to the public every day except Monday. An entrance fee is charged, and my wife and I are in constant attendance giving lectures to parties of visitors, who may handle womerahs, boomerangs, stone weapons and other specimens freely so that a better understanding of the Australian and Pacific Island natives can be acquired.

The slogan of the Gallery is " Man, know thyself," and it is hoped that by making our own people familiar with the arts and crafts of our primitive contemporaries we may come to look upon them with interest and understanding. A naturalist club has been formed for the local children, under the title of the " Blue Mountains Naturalists' Club." Meetings take place every Sunday morning, new collections received are viewed by the members and competitions for essays, drawings and collecting are run.

Medlow Bath was selected for the site of the Gallery because it is the first locality in which I collected natural history specimens, and as the Gallery and its contents are willed to the State, it will be for all time where I did my first collecting.

Axe-Grinding Stones from the Attunga District, New South Wales. *By E. D. Coulter.* Plate V, Figs. 5-7.

Some time ago I found at Glen Haven, Sulcor, a stone artefact of unusual interest to me. It is a small conical piece of granite, $8 \times 4 \times 3$ cms. in dimensions, with a smoothly ground gouge-shaped face on its broader end, which is a blunt natural edge ; it had been carried about by the blacks because the nearest occurrence of granite is eight miles distant from the site of its finding. I found another specimen at Dam Flat, Sulcor, made from portion of a pebble, with a similar gouged-out channel at one end ; it is a piece of fine-grained sandstone which occurs in the vicinity, and is $10 \times 9 \times 2{\cdot}5$ cms. in size, being broad and flat. I was puzzled to know what these artefacts were used for until I had collected several others on which the groove extended right across the surface of the piece of stone. They were found on camp-sites near permanent springs, in association with stone chippings, axes and axe blanks, and all have good abrasive qualities. Their size indicates that they were designed for hand use. There is also a large specimen of coarse sandstone, 10 lb. in weight, which has the groove on one margin. When found it was partly buried in earth, with the grooved edge uppermost and inclined at a slight angle, as though it had remained undisturbed since the occasion on which it was last used by the axe-makers.

These artefacts were used in the grinding of axe edges, and the curves of the axe-blade facets, especially the finely polished examples, obtained from this locality conform more or less with the sweep of the groove, as though the axe had been held in the left hand and the grinding stone in the right hand. After studying a series of these axes, I am sure that they were successively subjected to grinding with coarse grits, then with finer gritted stone, and finally with ashes possibly applied with a damp piece of animal fur.

LISTS OF MEMBERS

The asterisks denote foundation members, and the date in parentheses is the year of election to membership.

NEW SOUTH WALES.

Honorary Members.

Austen, Mr. Leo (1931), Flat 2, 39 Barker St., Casino.
Bates, Mrs. Daisy, O.B.E. (1941), c.o. Bank of Australasia, Adelaide.
*Brown, Professor A. Radcliffe, M.A. (1928), Department of Social Anthropology, University of Oxford, England.
Buck, Professor P. H. (1939), Director, Bernice Pauahi Bishop Museum, Honolulu, Hawaii.
Elkin, Professor A. P., M.A., Ph.D. (1929), Department of Anthropology, University of Sydney.
Firth, Professor R., M.A., Ph.D. (1940), Department of Social Anthropology, University of London.
Mead, Margaret, Ph.D. (1940), Assistant Curator, Department of Anthropology, American Museum of Natural History, New York, U.S.A.

Life Member.

Wylie, D. S., F.A.I.S., A.S.A.A. (Eng.), (1934), 160 Castlereagh St., Sydney.

Members.

Albert, M. F., F.R.G.S. (1939), 137-9 King St., Sydney.
Alcorn, Dr. A. (1941), Katoomba St., Katoomba.
Allan, Miss E. M. (1934), "Vergemont," Gilliver Ave., Vaucluse.
Andronicus, C. (1940), 159 Belmore Road, Randwick.
Adam, Dr. L. (1944), Queen's College, University of Melbourne.
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OBITUARY

Harold Octavius Lethbridge, M.B., Ch.M., F.R.A.C.S., M.B.E., died on November 5th, 1944. He was born on his father's cattle station, western Queensland, on January 30th, 1880.

Educated at Brisbane Grammar School and gaining two special prizes in his last year, he went to the Medical School, Sydney, entering into residence at St. Paul's College. He won the Slade Prize for physics and was top in his year for physiology. On graduation in 1904 he went to Prince Alfred Hospital as a Resident, in 1906 to the Children's Hospital Glebe, was the first Superintendent of the Children's Hospital, Camperdown, and in January, 1907, started the Royal Alexandra Hospital for Children.

He came to Narrandera on July 4th, 1908, and made it his home. Enlisting in September, 1915, he served in Egypt and France and finally at Southall Hospital for Limbless. He was awarded the M.B.E. in 1918.

In France on one occasion his insistence that a case sent to him was typhus and not what it had been previously diagnosed as resulted in 2,000 troops being isolated instead of being sent to a forward area.

While at Southall, he was sent to all the big limbless hospitals in France and Italy to study their methods.

He resumed practice in Narrandera in November, 1919.

His professional skill, well known to those best fitted to judge, was widely availed of throughout the Riverina, and his sterling qualities and outstanding personality endeared him to a large circle of friends.

He was one of the original Fellows of the R.A.C.S.

In recent years he confined his work chiefly to consultations, radiology and pathology, and to certain hobbies, the chief of which was the making of a museum.

His great work in and for the Narrandera District Hospital will live long. The private and intermediate unit in the hospital is named after him.

For his museum he got together a remarkably complete collection of aboriginal exhibits, many of which he collected himself with the help of some of the boys from the Intermediate High School, whom he referred to as "My Museum Boys."

In the museum, one looks at a specimen and alongside it one reads its history.

The museum is essentially Australian and chiefly aboriginal, but has also other very interesting exhibits, of which the following are noteworthy:

Admiral King's globe showing the routes of Cook and others.

All known species of fish in the Murrumbidgee.

Original letters from Sturt and Leichhardt to Governor King.

A picture of Bligh leaving the *Bounty*, presented by a great-grand-daughter.

Those in the Riverina as well as many others are the poorer for the loss of a remarkable and lovable man who until quite recently appeared to have many years of useful life ahead of him.

H. B. ROWLANDS.

REVIEW:

The Bora Ground: Being Part IV of a Series on the Aborigines of the Darling River Valley and of Central New South Wales. *By Lindsay Black, with a foreword by Professor A. P. Elkin.* 64 *pp.*, 1944.

This booklet contains a chapter on Bora grounds in which original descriptions are quoted from literature and from unpublished sources, a general description of these interesting sites in New South Wales with a map and list of those known. The Banaway site, with its magnificent array of carved trees, is described, and diagrams are given of the designs represented and the disposition of the dendroglyphs. The latter are also illustrated by a fine series of photographs taken by the author's son, Langdon Black, R.A.A.F., while other plates show examples of aboriginal stone arrangements and camp-sites, and also soil erosion. This booklet is thus packed with information and is a valuable contribution to our knowledge of the ethnography of far western New South Wales.

F.D.McC.

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(*a*) To promote the science of Anthropology.

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(*c*) To take public and official action in the interests of anthropology, as may be deemed desirable.

(*d*) To encourage affiliated societies to co-operate in every possible way.

The Anthropological Society of N.S.W. as such is not responsible for any opinion or declaration published in this magazine, by whomsoever expressed, unless specifically stated to be so by the Editor.

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